

WHAT IS CLAIMED IS:

1           1.       A method for routing a call within a telecommunications network  
2     containing individual switches to direct the call dialed by an originating subscriber to a  
3     terminating subscriber, comprising the steps of:  
4           receiving a call at a first switch within the network;  
5           launching a query from the first switch to a centralized network routing database,  
6     which in response to the query returns to the first switch an identity of at least one  
7     downstream switch to which the call is to be routed; and  
8           initiating a link from the first switch to the one downstream switch identified by  
9     the network routing database to enable the first switch to route the call to the downstream  
10    switch for ultimate delivery to the terminating subscriber.

1           2.       The method according to claim 1 wherein the query is launched from the  
2     first switch to the network routing database via a SS7 link.

1           3.       The method according to claim 1 wherein the query utilizes one of a  
2     Transactional Capabilities Application Part (TCAP), SIP or Parley protocol

1           4.       The method according to claim 2 wherein the identity of the one  
2     downstream switch is returned as a Destination Point Code.

1           5.       The method according to claim 2 wherein the identity of the one  
2     downstream switch is returned as a Next Switch Identifier.

1           6.       The method according to claim 1 wherein the step of initiating a link from  
2     the first switch to the one downstream switch includes the step of transmitting an Initial  
3     Address Message (IAM) to the downstream switch, which, in response, establishes a link  
4     in a backward direction to the first switch via a packet network.

1           7.     The method according to claim 1 wherein the step of initiating a link from  
2 the first switch to the one downstream switch includes the steps of:  
3           translating the identity of the next switch to identify at least one trunk group  
4 linking the first switch to the downstream switch; and  
5           selecting said one trunk group.

1           8     The method according to claim 1 wherein centralized network routing  
2 switch returns a sequence of downstream switches to which the which the call is to be  
3 routed.

1           9.     The method according to claim 6 wherein the first switch initiates a link to  
2 the one downstream switch by sending the Initial Address message using Bearer  
3 Independent Call Control Signaling.

1           10.    The method according to claim 9 wherein the one downstream switch sets  
2 up a connection to the first switch in a backward direction.

1           11.    The method according to claim 1 wherein the network routing database, in  
2 response to the query launched by the first switch, first establishes a location routing  
3 number for the call received at the first switch, and in accordance with the location  
4 routing number, then returns the identity of the one downstream switch.

1           12.    The method according to claim 1 wherein the step of launching a query to the  
2 routing database also includes launching a query to establish a location routing number.

1           13.    The method according to claim 12 wherein the query to establish the  
2 location routing number is launched to the routing database.

1           14     The method according to claim 12 wherein the query to establish the  
2 location routing number is launched to a separate database.

1           15.     The method according to claim 1 including the step of updating the  
2 routing database in response to a need to route traffic away a failed switch to afford the  
3 ability to better manage the communications network.

1           16.     The method according to claim 1 wherein the routing database can receive  
2 a query from a switch outside the network.

1           17.     The method according to claim 1 wherein the routing database also returns  
2 trunk selection information for receipt by a downstream switch.

1           18.     A method for routing a call within a telecommunications network  
2 containing individual switches to direct the call dialed by an originating subscriber to a  
3 terminating subscriber, comprising the steps of:  
4           receiving a call at a first switch within the network;  
5           launching a query from the first switch to a centralized network routing database  
6 via a SS7 link, wherein the network routing database, in response to the query returns to  
7 the first switch an identity in the form of one of a Destination Point Code (DPC) or Next  
8 Switch Identifier (NSI) of at least one downstream switch to which the call is to be routed;  
9 and  
10          initiating a link from the first switch to the one downstream switch identified by  
11 the network routing database to enable the first switch to route the call to the downstream  
12 switch for ultimate delivery to the terminating subscriber.

1           19.     A method for routing a call within a telecommunications network  
2 containing individual switches to direct the call dialed by an originating subscriber to a  
3 terminating subscriber, comprising the steps of:  
4           receiving a call at a first switch within the network;  
5           launching a query from the first switch to a centralized network routing database,  
6 which in response to the query , first establishes a location routing number for the call  
7 received at the first switch, and in accordance with the location routing number, then  
8 returns the identity of the one downstream switch returns to which the call is to be routed;

9 initiating a link from the first switch to the one downstream switch identified by  
10 the network routing database to enable the first switch to route the call to the downstream  
11 switch for ultimate delivery to the terminating subscriber.

1 20. A method for routing a call within a telecommunications network  
2 containing individual switches to direct the call dialed by an originating subscriber to a  
3 terminating subscriber, comprising the steps of:

4 receiving a call at a first switch within the network;

5 launching a query utilizes a Transactional Capabilities Application Part (TCAP)  
6 protocol from the first switch to a centralized network routing database, which in  
7 response to the query returns to the first switch an identity of at least one downstream  
8 switch to which the call is to be routed; and

9 initiating a link from the first switch to the one downstream switch identified by  
10 the network routing database to enable the first switch to route the call to the downstream  
11 switch for ultimate delivery to the terminating subscriber.